

5,7-dihydro-3-[2-[1-(2-methyl-4-thiazolemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(3-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(4-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]propyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one; and

5,7-dihydro-3-[2-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.

20. (Amended) The dosage form of Claim 19 wherein the compound of Formula I is 5,7-dihydro-3-[2-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.

#### REMARKS

In the Office Action dated April 10, 2002, Claims 1-21 are pending. Claim 10 has now been cancelled. Claims 1-9 and 11-21 are currently under examination.

In the Office Action Claims 1-9 have been rejected under 35 U.S.C. §112, first paragraph, as allegedly lacking enabling support, except for those acetylcholinesterase inhibitors which are compounds of Formula I. Additionally, Claim 1 has been rejected under 35 U.S.C. §102(a) as allegedly anticipated by Giovannini et al., *Eur. J. Pharmacol.* 354(1), pp. 17-24, 1998 (hereinafter "Giovannini et al."). Claims 1-3 have been rejected under 35

U.S.C. §102(b) as allegedly anticipated by Bryson et al., Abstract from *Drugs & Aging* 10(3), pp. 234-239, 1997 (hereinafter "Bryson et al."). Claims 1-4 have been rejected under 35 U.S.C. §102(b) as allegedly anticipated by Cheng et al., abstract to *NeuroReport*, 8(1), pp. 97-101, 1996 (hereinafter "Cheng et al."). Claim 7 has been rejected under 35 U.S.C. §102(b) as allegedly anticipated by Leonard et al., *Journal of Neuroscience*, Vol. 17, No. 2, pp. 774-785, 1997 (hereinafter "Leonard et al."). Further, Claims 4, 9, 10, 13, and 16-18 have been rejected under 35 U.S.C. §102(b) as allegedly anticipated by O'Malley et al., U.S. Patent No. 5,494,908 (hereinafter "O'Malley '908"). Also, Claims 1-21 have been rejected under 35 U.S.C. §103(a) as allegedly unpatentable over O'Malley '908. Additionally, Claims 1 -21 have been rejected under the judicially created doctrine of obviousness-type double patenting, as allegedly unpatentable over Claims 1 and 2 of Villalobos et al., U.S. Patent No. 5,538,984 (hereinafter "Villalobos '984").

This response addresses each of the Examiner's rejections. Accordingly, the present application is in condition for allowance. Favorable consideration of all pending claims is respectfully requested.

Applicant has corrected an inadvertent typographical error in the name of a compound which appears in the specification at page 4 and in Claims 11, 12, 14, 15, 19 and 20. Specifically, the compound named "5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one" has been corrected to 5,7-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one. Applicant observes that the numeral after the first bracket locates the substituted piperidinyl group on the ethyl chain. Inasmuch as the ethyl chain has no "carbon number three," the named compound as originally written includes a numbering error which could be detected and

corrected by a person of ordinary skill in the chemical art. *See Ex parte Brodbeck*, 199 USPQ 230 (Pat. Off. Bd. App. 1977). Therefore, the correction adds no new matter.

Additionally, applicants have corrected inadvertent typographical errors in the names of two other compounds appearing on page 4, line 17 and line 27 and in Claims 11, 14 and 19. The compounds are 6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one; and 5,7-dihydro-3-[2-[1-(2-chloro-5-thiophenemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one. Through inadvertent error, both of these two compounds appear in the claims as “benzisoxazalone.” These errors would be detectable and correctable by a person of ordinary skill in the chemical art. Therefore, this correction also adds no new matter.

The Examiner has rejected Claims 1-9 under 35 U.S.C. §112, first paragraph, as allegedly lacking enabling support. The Examiner admits that the specification enables acetylcholinesterase inhibitors which are compounds of Formula I. Accordingly, in an effort to favorably advance the prosecution of the present application, applicants have amended Claims 1-9 to refer to compounds of Formula I. Applicants reserve the right to pursue the subject matter directed to other acetylcholinesterase inhibitors in one or more continuing applications.

The Examiner has rejected Claim 1 under 35 U.S.C. §102(a) as allegedly anticipated by Giovannini et al. Giovannini et al teach the administration of acetylcholinesterase inhibitors, such as metrifonate, for the treatment of Alzheimer's Disease. As indicated, Claim 1 has been amended to incorporate Formula I. Applicants submit that Giovannini et al. do not teach the compounds of Formula I. Accordingly, the rejection of Claim 1 under 35 U.S.C.

§102(b) based on alleged anticipation by Giovannini et al. is overcome, and withdrawal thereof is respectfully requested.

Additionally, the Examiner has rejected Claim 1-3 under 35 U.S.C. §102(b) as allegedly anticipated by Bryson et al. Bryson et al. teach the administration of an acetylcholinesterase inhibitor, namely donepezil, for the treatment of Alzheimer's Disease. Claims 1-3 have been amended to incorporate Formula I. Applicants submit that Bryson et al. do not teach the compounds of Formula I. Accordingly, the rejection of Claims 1-3 under 35 U.S.C. §102(b) based on alleged anticipation by Bryson et al. is overcome, and withdrawal thereof is respectfully requested.

Further, the Examiner has rejected Claims 1-4 under 35 U.S.C. §102(b) as allegedly anticipated by Cheng et al. Cheng et al. teach the administration of an acetylcholinesterase inhibitor, namely huperzine A, for the treatment of Alzheimer's Disease. Claims 1-4 have been amended to incorporate Formula I. Applicants submit that Cheng et al. do not teach the compounds of Formula I. Accordingly, the rejection of Claims 1-4 under 35 U.S.C. §102(b) based on alleged anticipation by Cheng et al. is overcome, and withdrawal thereof is respectfully requested.

Moreover, the Examiner has rejected Claim 7 under 35 U.S.C. §102(b) as allegedly anticipated by Leonard et al. Leonard et al. teach the administration of an acetylcholinesterase inhibitor, namely neostigmine, for the modulation of REM sleep states. Claim 7 has been amended to incorporate Formula I. Applicant submits that Leonard et al. do not teach the compounds of Formula I. Accordingly, the rejection of Claim 7 under 35 U.S.C. §102(b) based on alleged anticipation by Leonard et al. is overcome, and withdrawal thereof is respectfully requested.

Additionally, the Examiner has rejected Claims 4, 9, 10, 13, and 16-18 under 35 U.S.C. §102(b) as allegedly anticipated by O'Malley '908. In this regard, applicant initially notes that Claim 10 has been cancelled without prejudice and that Claims 4 and 9 have been amended, as indicated above, to incorporate Formula I. Applicant respectfully traverses the rejection. Applicant respectfully notes that, under MPEP §706.02, for anticipation under 35 U.S.C. §102, the reference must teach every aspect of the claimed invention, either explicitly or impliedly. Similarly, under MPEP 2131 "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, "the identical invention must be shown in as complete detail as is contained in the ... claim." (MPEP quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (ellipsis in MPEP quote). Applicant respectfully submits that neither 1) the methods of Claims 4 and 9 nor 2) the compounds recited in Claims 13 and 16-18, are "either expressly or inherently described" in the O'Malley reference, as the legal standard of *Verdegaal Bros.* requires.

In support of this assertion, regarding in particular Claims 4 and 9, applicant respectfully directs the Examiner's attention to the O'Malley abstract wherein O'Malley et al. teach that their compounds are "useful for the treatment of various memory dysfunctions characterized by a decreased cholinergic function such as Alzheimer's disease." O'Malley et al. do not teach a method of improving, in a companion animal, either cognitive processing or social interactions. Nor do O'Malley et al. teach a method of adjusting the sleep-wake cycle in a companion animal. Nor do O'Malley et al. teach a method of treating, in a companion animal, memory loss, disorientation, confusion, or inappropriate elimination. Applicant

submits that because the O'Malley medicinal uses differ from those in the present application, the rejection of Claims 4 and 9 under U.S.C. §102(b) as allegedly anticipated by O'Malley '908 has been overcome. Accordingly, applicant respectfully requests withdrawal of the rejection of Claims 4 and 9.

Regarding Claims 13, 16, 17, and 18, which teach 3-(piperidinylalkyl)-1,2-benzisoxazoles, the Examiner alleges 1) that O'Malley et al. teach "the benzisoxazole compounds" and their pharmaceutical preparations; 2) that the compounds are acetylcholinesterase inhibitors; and 3) that the compounds are effective in treatment of Alzheimer's disease.

In response, applicant initially notes that O'Malley et al. teach 3-amino-1,2-benzisoxazoles and not 3-(piperidinylalkyl)-1, 2-benzisoxazoles. Applicant further notes that, in an effort to favorably advance the prosecution of the present application, applicant has amended Formula I to remove the possibility that  $Y = -NR^4(CH_2)_m-$ . As a result, no compound embraced by Formula I can be a compound taught by O'Malley. Applicant reserves the right to pursue the subject matter directed to 3-amino-1,2-benzisoxazoles in one or more continuing applications.

Further, applicant submits that the legal standard that MPEP §2131 requires for anticipation 35 U.S.C. §102(b), namely "each and every element...either expressly or impliedly described," has not been met. Accordingly, the rejection of Claims 13 and 16-18 under 35 U.S.C. §102(b) based on alleged anticipation by O'Malley et al. is overcome, and withdrawal thereof is respectfully requested.

Additionally, the Examiner has rejected Claims 1-21 under 35 U.S.C. §103(a) as allegedly unpatentable over O'Malley '908. Applicant respectfully traverses this rejection.

The Examiner admits that O'Malley '908 does not teach the treatment of the cognitive disorders recited in Claims 1-21. However, the Examiner alleges that O'Malley '908 teaches the following: 1) benzisoxazole compounds; 2) that benzisoxazole compounds are acetylcholinesterase inhibitors; 3) that benzisoxazole compounds are effective in treatment of Alzheimer's Disease; and 4) pharmaceutical preparations of benzisoxazole compounds. The Examiner alleges that it would have been obvious to one of ordinary skill in the art to employ "these" benzisoxazole compounds for "disorders related to memory dysfunctions where there is a decrease in the cholinergic function, as taught by O'Malley et al."

In response, applicant initially notes that, under MPEP § 2142, as well as such case law as *In re Oetiker*, three criteria must be met in order to establish a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, USPQ2d 1443 (Fed. Cir. 1992). First, there must be some suggestion or motivation, either in the cited reference or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Third, the prior art reference must teach or suggest all of the claim limitations.

Regarding the first criterion, applicant respectfully asserts that the Examiner has failed to meet this criterion for both the chemical structures and the therapeutic methods. Concerning the chemical structures, applicant respectfully directs the Examiner's attention to the structural distinction made hereinabove between the compounds recited by O'Malley et al. and the those recited in the current application. Applicant respectfully submits that the Examiner has not provided a suggestion or motivation, either in the O'Malley patent or in the knowledge generally available to one of ordinary skill in the art, to modify the O'Malley 3-(aminoalkylamino)-1,2-benzisoxazoles with additional substituents, as claimed.

Concerning the therapeutic methods, applicant respectfully observes that the Examiner has not provided a suggestion or motivation, either in O'Malley '908 or in the knowledge generally available to one of ordinary skill in the art of veterinary medicine, to treat the disorders *in companion animals* recited by the claims in the present application, by methods used in the treatment of *human* memory dysfunctions, characterized by decreased cholinergic function, such as Alzheimer's Disease. Since a *prima facie* case of obviousness has not been established, applicants respectfully request withdrawal of the rejection under 35 U.S.C. §103(a).

The Examiner has additionally rejected Claims 1-21 under the judicially created doctrine of obviousness-type double patenting, as allegedly unpatentable over Claims 1 and 2 of U.S. Patent No. 5,538,984 ("Villalobos '984"). The Examiner has alleged that Claims 1-21 are not patentably distinct from Claims 1 and 2 of Villalobos '984 because both the present invention and Villalobos '984 are directed to, *inter alia*, treating a cognitive memory disorder or Alzheimer's Disease with the administration of acetylcholinesterase inhibitors of Formula I. Applicant respectfully traverses this rejection.

Applicant initially notes that under *In re Longi*, an Examiner is required to provide a *prima facie* case for obviousness-type double patenting. *In re Longi* 759 F2d 887, 225 USPQ 645 (Fed. Cir. 1989). Applicant respectfully submits that the Examiner has not met this burden. Applicant observes that while Claims 1 and 2 of Villalobos '984 are directed to "enhancing memory or treating Alzheimer's Disease," the rejected claims of the current application are directed to treating age-related behavioral disorders, cognitive dysfunction syndrome, involutive depression, memory loss, disorientation or confusion, and inappropriate elimination, *in companion animals*. Applicant respectfully submits that the Examiner has not



demonstrated that Claims 1 and 2 of Villalobos contain a suggestion or motivation to employ a similar treatment strategy for behavioral disorders that have not been linked to a diagnosis of Alzheimer's Disease. Since the Examiner has not met his burden of establishing a *prima facie* case of obviousness-type double patenting, applicant respectfully requests withdrawal of the rejection made on this basis.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Thus, in view of the foregoing amendments and remarks, the present application is in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "P. Bernstein", with a long horizontal flourish extending to the right.

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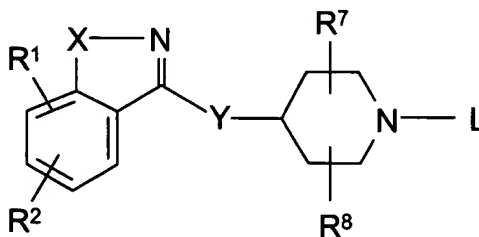
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**VERSION WITH MARKINGS SHOWING CHANGES MADE****IN THE SPECIFICATION:**

The paragraph beginning at page 4, line 30, has been amended as follows:

In most preferred embodiments of the invention, the compound of Formula I is 5,7-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one ~~5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one~~.

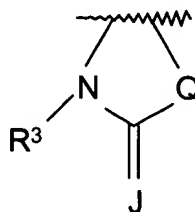
The paragraph beginning on page 2, line 29 to page 4, line 9 has been amended as follows:

**FORMULA I**

wherein  $R^1$  and  $R^2$  are each independently selected from the group consisting of hydrogen;  $(C_1-C_6)$  alkoxy; benzyloxy; phenoxy; hydroxy; phenyl; benzyl; halo; nitro; cyano;  $-COR^5$ ;  $-COOR^5$ ;  $-CONHR^5$ ;  $-NR^5R^6$ ;  $-NR^5COR^6$ ;  $-OCONR^5R^6$ ;  $-NHCOOR^5$ ;  $(C_1-C_6)$  alkyl which may be substituted with from 1 to 3 fluorine atoms;  $SO_pCH_2$ -phenyl or  $SO_p(C_1-C_6)$  alkyl, wherein  $p$  is 0, 1 or 2; pyridylmethyloxy or thienylmethyloxy; 2-oxazolyl; 2-thiazolyl; and benzenesulfonamide; wherein the phenyl moieties of said phenoxy, benzyloxy, phenyl, benzyl and benzenesulfonamide groups, the pyridyl and thienyl moieties of said pyridylmethyloxy or thienylmethyloxy groups, and the oxazolyl and thiazolyl moieties of said 2-oxazolyl and 2-thiazolyl groups may be substituted with 1 or 2 substituents independently selected from the

group consisting of halo, (C<sub>1</sub>-C<sub>4</sub>) alkyl, trifluoromethyl, (C<sub>1</sub>-C<sub>4</sub>) alkoxy, cyano, nitro and hydroxy;

or R<sup>1</sup> and R<sup>2</sup> are attached to adjacent carbon atoms and form, together with the carbon atoms to which they are attached, a group of Formula 2:



**FORMULA 2**

wherein R<sup>3</sup> is hydrogen or (C<sub>1</sub>-C<sub>6</sub>) alkyl; J is oxygen, sulfur or NR<sup>4</sup>; R<sup>4</sup> is hydrogen or (C<sub>1</sub>-C<sub>4</sub>) alkyl; and Q is oxygen, sulfur, NH CHCH<sub>3</sub>, C(CH<sub>3</sub>)<sub>2</sub>, -CH=CH-, or (CH<sub>2</sub>)<sub>I</sub> wherein I is an integer from 1 to 3;

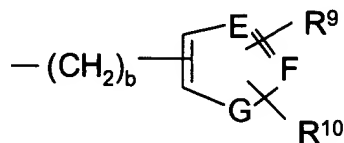
X is oxygen or sulfur;

Y is -(CH<sub>2</sub>)<sub>m</sub>-, -CH=CH(CH<sub>2</sub>)<sub>n</sub>-, -NR<sup>4</sup>(CH<sub>2</sub>)<sub>m</sub>-, or -O(CH<sub>2</sub>)<sub>m</sub>, wherein n is an integer from 0 to 3, and m is an integer from 1 to 3;

R<sup>5</sup> and R<sup>6</sup> are each independently selected from the group consisting of hydrogen, (C<sub>1</sub>-C<sub>6</sub>) alkyl, phenyl, and benzyl, wherein the phenyl moieties of said phenyl and benzyl groups may be substituted with 1 or 2 substituents independently selected from the group consisting of fluoro, chloro, bromo, iodo, (C<sub>1</sub>-C<sub>4</sub>) alkyl, trifluoromethyl, (C<sub>1</sub>-C<sub>4</sub>) alkoxy, cyano, nitro and hydroxy; or NR<sup>5</sup>R<sup>6</sup> together form a 4 or 5 membered ring wherein one atom of the ring is nitrogen and the other are carbon, oxygen or nitrogen; or NR<sup>5</sup>COR<sup>6</sup> together form a 4- or 5-membered lactam ring;

L is phenyl, phenyl-(C<sub>1</sub>-C<sub>6</sub>) alkyl, cinnamyl or pyridylmethyl, wherein the phenyl moieties of said phenyl and phenyl-(C<sub>1</sub>-C<sub>6</sub>) alkyl may be substituted with 1 to 3 substituents

independently selected from the group consisting of (C<sub>1</sub>-C<sub>6</sub>) alkyl, (C<sub>1</sub>-C<sub>6</sub>) alkoxy, (C<sub>1</sub>-C<sub>4</sub>) alkoxycarbonyl, (C<sub>1</sub>-C<sub>6</sub>) alkylcarbonyl, -OCONR<sup>5</sup>R<sup>6</sup>, -NHCOOR<sup>5</sup>, and halo; or L is a group of Formula 3:



### **FORMULA 3**

wherein b is an integer from 1 to 4; R<sup>9</sup> and R<sup>10</sup> are independently selected from the group consisting of hydrogen, (C<sub>1</sub>-C<sub>4</sub>) alkyl, halo, and phenyl; E and F are independently -CH- or nitrogen; and G is oxygen, sulfur or NR<sup>4</sup>, with the proviso that when E and F are both nitrogen, one of R<sup>9</sup> and R<sup>10</sup> is absent; and

R<sup>7</sup> and R<sup>8</sup> are independently selected from the group consisting of hydrogen, (C<sub>1</sub>-C<sub>6</sub>) alkyl, (C<sub>1</sub>-C<sub>6</sub>) alkoxycarbonyl, (C<sub>1</sub>-C<sub>6</sub>) alkylcarbonyl, and (C<sub>1</sub>-C<sub>6</sub>) alkoxy, with the proviso that said (C<sub>1</sub>-C<sub>6</sub>) alkoxy is not attached to a carbon that is adjacent to a nitrogen;

or a pharmaceutically acceptable salt or solvate thereof, and a pharmaceutically acceptable carrier.

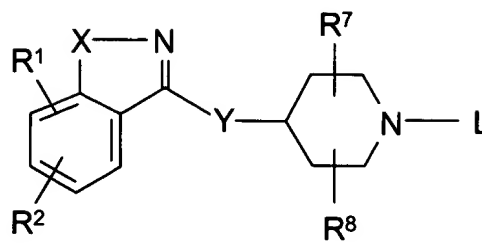
### **IN THE CLAIMS:**

Claim 10 has been cancelled without prejudice.

Claims 1, 3, 4, 5, 6, 7, 8, 11, 12, 14, 15, 19, and 20 have been amended as follows:

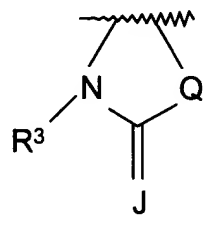
1. (Amended) A method of treating an age-related behavioral disorder in a companion animal comprising administering to a companion animal in need of such treatment a therapeutically effective amount of ~~an acetylcholinesterase inhibitor~~, a compound of Formula I

### FORMULA I



wherein R<sup>1</sup> and R<sup>2</sup> are each independently selected from the group consisting of hydrogen; (C<sub>1</sub>-C<sub>6</sub>) alkoxy; benzyloxy; phenoxy; hydroxy; phenyl; benzyl; halo; nitro; cyano; -COR<sup>5</sup>; -COOR<sup>5</sup>; -CONHR<sup>5</sup>; -NR<sup>5</sup>R<sup>6</sup>; -NR<sup>5</sup>COR<sup>6</sup>; -OCONR<sup>5</sup>R<sup>6</sup>; -NHCOOR<sup>5</sup>; (C<sub>1</sub>-C<sub>6</sub>) alkyl which may be substituted with from 1 to 3 fluorine atoms; SO<sub>p</sub>CH<sub>2</sub>-phenyl or SO<sub>p</sub>(C<sub>1</sub>-C<sub>6</sub>) alkyl, wherein p is 0, 1 or 2; pyridylmethyloxy or thienylmethyloxy; 2-oxazolyl; 2-thiazolyl; and benzenesulfonamide; wherein the phenyl moieties of said phenoxy, benzyloxy, phenyl, benzyl and benzenesulfonamide groups, the pyridyl and thienyl moieties of said pyridylmethyloxy or thienylmethyloxy groups, and the oxazolyl and thiazolyl moieties of said 2-oxazolyl and 2-thiazolyl groups may be substituted with 1 or 2 substituents independently selected from the group consisting of halo, (C<sub>1</sub>-C<sub>4</sub>) alkyl, trifluoromethyl, (C<sub>1</sub>-C<sub>4</sub>) alkoxy, cyano, nitro and hydroxy;

or R<sup>1</sup> and R<sup>2</sup> are attached to adjacent carbon atoms and form, together with the carbon atoms to which they are attached, a group of Formula 2:



### FORMULA 2

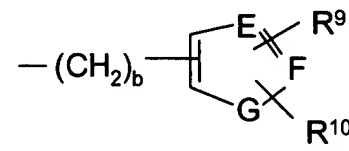
wherein  $R^3$  is hydrogen or  $(C_1-C_6)$  alkyl; J is oxygen, sulfur or  $NR^4$ ;  $R^4$  is hydrogen or  $(C_1-C_4)$  alkyl; and Q is oxygen, sulfur,  $NHCHCH_3$ ,  $C(CH_3)_2$ ,  $-CH=CH-$ , or  $(CH_2)_I$  wherein I is an integer from 1 to 3;

X is oxygen or sulfur;

Y is  $-(CH_2)_m-$ ,  $-CH=CH(CH_2)_n-$ , or  $-O(CH_2)_m$ , wherein n is an integer from 0 to 3, and m is an integer from 1 to 3;

$R^5$  and  $R^6$  are each independently selected from the group consisting of hydrogen,  $(C_1-C_6)$  alkyl, phenyl, and benzyl, wherein the phenyl moieties of said phenyl and benzyl groups may be substituted with 1 or 2 substituents independently selected from the group consisting of fluoro, chloro, bromo, iodo,  $(C_1-C_4)$  alkyl, trifluoromethyl,  $(C_1-C_4)$  alkoxy, cyano, nitro and hydroxy; or  $NR^5R^6$  together form a 4 or 5 membered ring wherein one atom of the ring is nitrogen and the other are carbon, oxygen or nitrogen; or  $NR^5COR^6$  together form a 4- or 5-membered lactam ring;

L is phenyl, phenyl- $(C_1-C_6)$  alkyl, cinnamyl or pyridylmethyl, wherein the phenyl moieties of said phenyl and phenyl- $(C_1-C_6)$  alkyl may be substituted with 1 to 3 substituents independently selected from the group consisting of  $(C_1-C_6)$  alkyl,  $(C_1-C_6)$  alkoxy,  $(C_1-C_4)$  alkoxycarbonyl,  $(C_1-C_6)$  alkylcarbonyl,  $-OCONR^5R^6$ ,  $-NHCOOR^5$ , and halo; or L is a group of Formula 3:



**FORMULA 3**

wherein b is an integer from 1 to 4;  $R^9$  and  $R^{10}$  are independently selected from the group consisting of hydrogen,  $(C_1-C_4)$  alkyl, halo, and phenyl; E and F are independently  $-CH-$  or

nitrogen; and G is oxygen, sulfur or NR<sup>4</sup>, with the proviso that when E and F are both nitrogen, one of R<sup>9</sup> and R<sup>10</sup> is absent; and

R<sup>7</sup> and R<sup>8</sup> are independently selected from the group consisting of hydrogen, (C<sub>1</sub>-C<sub>6</sub>) alkyl, (C<sub>1</sub>-C<sub>6</sub>) alkoxy, (C<sub>1</sub>-C<sub>6</sub>) alkylcarbonyl, and (C<sub>1</sub>-C<sub>6</sub>) alkoxy, with the proviso that said (C<sub>1</sub>-C<sub>6</sub>) alkoxy is not attached to a carbon that is adjacent to a nitrogen;

or a pharmaceutically acceptable salt or solvate thereof, and a pharmaceutically acceptable carrier.

3. (Amended) A method of improving the cognitive processing of a companion animal comprising administering to a companion animal in need of such improvement an amount of ~~an acetylcholinesterase inhibitor~~; a compound of Formula I sufficient to improve cognitive processing.

4. (Amended) A method of treating memory loss in a companion animal comprising administering to a companion animal in need of such improvement an amount of ~~an acetylcholinesterase inhibitor~~; a compound of Formula I sufficient to improve cognitive processing.

5. (Amended) A method of treating disorientation or confusion in a companion animal comprising administering to a companion animal in need of such treatment a therapeutically effective amount of ~~an acetylcholinesterase inhibitor~~; a compound of Formula I.

6. (Amended) A method of improving the social interactions of a companion animal comprising administering to a companion animal in need of such improvement a therapeutically effective amount of ~~an acetylcholinesterase inhibitor~~; a compound of Formula I.

7. (Amended) A method of adjusting the sleep-wake cycle of a companion animal comprising administering to a companion animal in need of such adjustment a therapeutically effective amount of ~~an acetylcholinesterase inhibitor.~~ a compound of Formula I.

8. (Amended) A method of treating inappropriate elimination in a companion animal comprising administering to a companion animal in need of such treatment a therapeutically effective amount of ~~an acetylcholinesterase inhibitor.~~ a compound of Formula I.

11. (Amended) The method of Claim 10 wherein the compound of Formula 1 is selected from the group consisting of:

5,7-dihydro-7-methyl-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-7-ethyl-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

~~5,7-dihydro-3-[2-[1-(2-chloro-5-thiophenemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;~~

5,7-dihydro-3-[2-[1-(2-chloro-5-thiophenemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-3-[2-[1-(2-methyl-4-thiazolemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(3-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(4-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;



5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]propyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

~~6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one~~

6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one; and

~~5,7-dihydro-3-[3-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.~~

5,7-dihydro-3-[2-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.

12. (Amended) The method of Claim 11 wherein the compound of Formula I is ~~5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one~~ 5,7-dihydro-3-[2-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.

14. (Amended) The pharmaceutical composition of Claim 13 wherein the compound of Formula I is selected from the group consisting of:

5,7-dihydro-7-methyl-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-7-ethyl-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

~~5,7-dihydro-3-[2-[1-(2-chloro-5-thiophenemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;~~

5,7-dihydro-3-[2-[1-(2-chloro-5-thiophenemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-3-[2-[1-(2-methyl-4-thiazolemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(3-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(4-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]propyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

~~6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one~~

6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one; and

~~5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.~~

5,7-dihydro-3-[2-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.

15. (Amended) The pharmaceutical composition of claim 14 wherein the compound of Formula I is ~~5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.~~ 5,7-dihydro-3-[2-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.

19. (Amended) The dosage form of Claim 18 wherein the compound of Formula I is selected from the group consisting of:

5,7-dihydro-7-methyl-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-7-ethyl-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

~~5,7-dihydro-3-[2-[1-(2-chloro-5-thiophenemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;~~

5,7-dihydro-3-[2-[1-(2-chloro-5-thiophenemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-3-[2-[1-(2-methyl-4-thiazolemethyl)-4-piperidinyl]ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(3-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

3-[2-[1-(4-bromophenylmethyl)-4-piperidinyl]ethyl]-5,7-dihydro-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

5,7-dihydro-3-[3-[1-(phenylmethyl)-4-piperidinyl]propyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one;

~~6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one~~

6,8-dihydro-3-[2-[1-(phenylmethyl)-4-piperidinyl]ethyl]-7H-pyrrolo[5,4-g]-1,2-benzisoxazol-7-one; and

~~5,7-dihydro-3-[3-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.~~

5,7-dihydro-3-[2-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.

20. (Amended) The dosage form of Claim 19 wherein the compound of Formula I is  
5,7-dihydro-3-[32-(1-(phenylmethyl)-4-piperidinyl)ethyl]-6H-pyrrolo[4,5-f]-1,2-benzisoxazol-6-one.